003DB—Dennis silt loam, 1 to 4 percent slopes

Map Unit Composition

Dennis: 85 percent
Minor components: 15 percent

Component Descriptions

Dennis
MLRA: 112 - Cherokee Prairies
Landform: Hillslope on upland
Hillslope position: Summit, footslope
Parent material: Silty and clayey residuum weathered from shale, unspecified
Slope: 1 to 4 percent
Depth to restrictive feature: 40 to 60 inches to bedrock (paralithic)
Drainage class: Moderately well drained
Slowest permeability: Slow (About 0.06 in/hr)
Available water capacity: Moderate (About 8.8 inches)
Shrink-swell potential: High (About 7.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: About 12 to 18 inches
Runoff class: High
Ecological site: Loamy Upland (pe35-42)
Land capability (nonirrigated): 2e

Typical Profile:
H1—0 to 10 inches; silt loam
H2—10 to 14 inches; silty clay loam
H3—14 to 56 inches; silty clay
Cr—56 to 60 inches;

Minor Components
Eram
Composition: About 5 percent
Geomorphic Position: hillslope on upland
Slope: 1 to 4 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Moderately well drained
Ecological site: Clay Upland (pe35-42)

Kenoma
Composition: About 4 percent
Slope: 1 to 4 percent
Drainage class: Moderately well drained
Ecological site: Clay Upland (pe35-42)

Talihina
Composition: About 3 percent
Slope: 1 to 4 percent
Depth to restrictive feature: 10 to 20 inches to bedrock (paralithic)
Drainage class: Moderately well drained
Ecological site: Clay Upland (pe35-42)

Okemah
Composition: About 3 percent
Slope: 1 to 4 percent
Drainage class: Moderately well drained
Ecological site: Loamy Upland (pe35-42)

003EC—Eram silty clay loam, 4 to 7 percent slopes

Map Unit Composition

Eram: 90 percent

Component Descriptions

Eram
MLRA: 112 - Cherokee Prairies
Landform: Hillslope on upland
Hillslope position: Backslope
Parent material: Silty and clayey residuum weathered from shale, unspecified
Slope: 4 to 7 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Moderately well drained
Slowest permeability: Slow (About 0.06 in/hr)
Available water capacity: Low (About 4.9 inches)
Shrink-swell potential: High (About 7.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: About 6 to 18 inches
Runoff class: Very high
Ecological site: Clay Upland (pe30-36)
Land capability (nonirrigated): 4e

Typical Profile:
H1—0 to 10 inches; silty clay loam
H2—10 to 33 inches; silty clay
Cr—33 to 37 inches; weathered bedrock

003LA—Lanton silty clay loam, occasionally flooded

Map Unit Composition

Lanton: 85 percent
Minor components: 15 percent

Component Descriptions

Lanton

MLRA: 112 - Cherokee Prairies
Landform: Flood plain on river valley
Parent material: Silty and clayey alluvium
Slope: 0 to 1 percent
Drainage class: Somewhat poorly drained
Slowest permeability: Very slow (About 0.00 in/hr)
Available water capacity: High (About 10.6 inches)
Shrink-swell potential: High (About 7.5 LEP)
Flooding hazard: Occasional
Depth to seasonal water saturation: About 12 to 24 inches
Runoff class: Low
Ecological site: Loamy Lowland (pe35-42)
Land capability (nonirrigated): 2w

Typical Profile:
H1—0 to 8 inches; silty clay loam
H2—8 to 36 inches; silty clay loam
H3—36 to 48 inches; silty clay
H4—48 to 60 inches; silty clay

Minor Components
Mason
Composition: About 10 percent
Slope: 0 to 1 percent
Drainage class: Well drained
Ecological site: Loamy Lowland (pe35-42)

Osage
Composition: About 5 percent
Slope: 0 to 1 percent
Drainage class: Poorly drained
Ecological site: Clay Lowland (pe35-42)

031EC—Eram silt loam, 3 to 7 percent slopes

Map Unit Composition

Eram: 90 percent
Minor components: 10 percent

Component Descriptions

Eram
MLRA: -
Landform: Hillslope on upland
Hillslope position: Backslope
Parent material: Silty and clayey residuum weathered from shale, unspecified
Slope: 3 to 7 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Moderately well drained
Slowest permeability: Slow (About 0.06 in/hr)
Available water capacity: Low (About 4.8 inches)
Shrink-swell potential: High (About 7.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: About 6 to 18 inches
Runoff class: Very high
Ecological site: Clay Upland (pe35-42)
Land capability (nonirrigated): 4e

Typical Profile:
H1—0 to 9 inches; silt loam
H2—9 to 32 inches; silty clay
Cr—32 to 36 inches; weathered bedrock

Minor Components
Ringo
Composition: About 5 percent
Slope: 3 to 15 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Moderately well drained
Ecological site: Clay Upland (pe35-42)

Bates
Composition: About 5 percent
Slope: 3 to 7 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained
Ecological site: Loamy Upland (pe35-42)

139CM—Clareson-Eram complex, 3 to 15 percent slopes

Map Unit Composition

Clareson: 55 percent
Eram: 30 percent
Minor components: 15 percent

Component Descriptions

Clareson
MLRA: 112 - Cherokee Prairies
Landform: Hillslope on upland
Parent material: Silty and clayey residuum weathered from limestone
Slope: 3 to 15 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (lithic)
Drainage class: Well drained
Slowest permeability: Slow (About 0.06 in/hr)
Available water capacity: Low (About 3.2 inches)
Shrink-swell potential: High (About 7.5 LEP)
Flooding hazard: None

Depth to seasonal water saturation: More than 6 feet
Runoff class: Very high
Ecological site: Shallow Flats (pe35-42)
Land capability (nonirrigated): 6e

Typical Profile:
A—0 to 8 inches; silty clay loam
AB—8 to 16 inches; silty clay loam
Bt—16 to 24 inches; very flaggy silty clay loam
R—24 to 32 inches; unweathered bedrock

Eram
MLRA: 112 - Cherokee Prairies
Landform: Hillslope on upland
Hillslope position: Backslope
Parent material: Silty and clayey residuum weathered from shale
Slope: 3 to 12 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Moderately well drained
Slowest permeability: Slow (About 0.06 in/hr)
Available water capacity: Low (About 4.3 inches)
Shrink-swell potential: High (About 7.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: About 9 to 14 inches
Runoff class: Very high
Ecological site: Clay Upland (pe35-42)
Land capability (nonirrigated): 6e

Typical Profile:
Ap—0 to 9 inches; silty clay loam
Bt—9 to 28 inches; silty clay
Cr—28 to 32 inches; weathered bedrock

Minor Components
Rock outcrop
Composition: About 10 percent

Bates
Composition: About 5 percent
Slope: 3 to 7 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained
Ecological site: Loamy Upland (pe35-42)

602CB—Catoosa silt loam, 1 to 3 percent slopes

Map Unit Composition

Catoosa: 85 percent
Minor components: 8 percent

Component Descriptions

Catoosa
MLRA: 112 - Cherokee Prairies
Landform: Ridge on upland
Parent material: Silty and clayey residuum weathered from limestone and shale
Slope: 1 to 3 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (lithic)
Drainage class: Well drained
Slowest permeability: Moderate (About 0.60 in/hr)
Available water capacity: Low (About 4.9 inches)
Shrink-swell potential: Moderate (About 4.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: More than 6 feet
Runoff class: Medium
Ecological site: Loamy Upland (pe35-42)
Land capability (nonirrigated): 2e

Typical Profile:
H1—0 to 12 inches; silt loam
H2—12 to 25 inches; silty clay loam
R—25 to 29 inches; unweathered bedrock

Minor Components
Clareson
Composition: About 4 percent
Geomorphic Position: hillslope on upland
Slope: 3 to 15 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (lithic)
Drainage class: Well drained
Ecological site: Shallow Flats (pe35-42)

Eram
Composition: About 4 percent
Geomorphic Position: hillslope on upland
Slope: 3 to 12 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Moderately well drained
Ecological site: Clay Upland (pe35-42)

602CM—Clareson-Rock outcrop complex, 2 to 15 percent slopes

Map Unit Composition

Clareson: 60 percent
Rock outcrop: 20 percent
Minor components: 20 percent

Component Descriptions

Clareson
MLRA: 112 - Cherokee Prairies
Landform: Hillslope on upland
Hillslope position: Backslope
Parent material: Silty and clayey residuum weathered from limestone, unspecified
Slope: 7 to 15 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (lithic)
Drainage class: Well drained
Slowest permeability: Slow (About 0.06 in/hr)
Available water capacity: Low (About 3.7 inches)
Shrink-swell potential: High (About 7.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: More than 6 feet
Runoff class: Very high
Ecological site: Shallow Flats (pe35-42)
Land capability (nonirrigated): 6e

Typical Profile:
H1—0 to 11 inches; silty clay loam
H2—11 to 15 inches; very flaggy silty clay loam
H3—15 to 32 inches; extremely flaggy silty clay
R—33 to 37 inches;

Rock outcrop
MLRA: 112 - Cherokee Prairies
Landform: Ridge on upland
Hillslope position: Shoulder
Drainage class: Well drained
Depth to seasonal water saturation: More than 6 feet
Land capability (nonirrigated): 8

Minor Components
Catoosa
Composition: About 10 percent
Geomorphic Position: hillslope on upland
Slope: 1 to 3 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (lithic)
Drainage class: Well drained
Ecological site: Loamy Upland (pe35-42)

Eram
Composition: About 6 percent
Geomorphic Position: hillslope on upland
Slope: 4 to 8 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Moderately well drained
Ecological site: Clay Upland (pe35-42)

Lebo
Composition: About 4 percent
Geomorphic Position: hillslope on upland
Slope: 15 to 30 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained
Ecological site: Loamy Upland (pe35-42)

602LA—Lanton silt loam, occasionally flooded

Map Unit Composition

Lanton: 90 percent
Minor components: 10 percent

Component Descriptions

Lanton
MLRA: 112 - Cherokee Prairies
Landform: Flood plain on valley
Parent material: Silty and clayey alluvium
Slope: 0 to 1 percent
Drainage class: Somewhat poorly drained
Slowest permeability: Slow (About 0.06 in/hr)
Available water capacity: High (About 11.5 inches)
Shrink-swell potential: Moderate (About 4.5 LEP)
Flooding hazard: Occasional
Depth to seasonal water saturation: About 9 to 14 inches
Runoff class: High
Ecological site: Loamy Lowland (pe35-42)
Land capability (nonirrigated): 2w

Typical Profile:
H1—0 to 14 inches; silt loam
H2—14 to 53 inches; silt loam
H3—53 to 60 inches; silty clay loam

Minor Components
Osage
Composition: About 10 percent
Slope: 0 to 1 percent
Drainage class: Poorly drained
Ecological site: Clay Lowland (pe35-42)

602VC—Verdigris silt loam, 0 to 2 percent slopes, frequently flooded

Map Unit Composition

Verdigris: 85 percent
Minor components: 15 percent

Component Descriptions

Verdigris
MLRA: 112 - Cherokee Prairies
Landform: Flood plain on river valley
Parent material: Fine-silty alluvium
Slope: 0 to 2 percent
Drainage class: Well drained
Slowest permeability: Moderate (About 0.60 in/hr)
Available water capacity: High (About 11.9 inches)
Shrink-swell potential: Moderate (About 4.5 LEP)
Flooding hazard: Frequent
Depth to seasonal water saturation: More than 6 feet
Runoff class: Low
Ecological site: Loamy Lowland (pe35-42)
Land capability (nonirrigated): 5w

Typical Profile:
H1—0 to 9 inches; silt loam
H2—9 to 32 inches; silt loam
H3—32 to 52 inches; silt loam
H4—52 to 60 inches; silt loam

Minor Components
Osage
Composition: About 10 percent
Slope: 0 to 1 percent
Drainage class: Poorly drained
Ecological site: Loamy Lowland (pe35-42)

Summit
Composition: About 5 percent
Slope: 1 to 4 percent
Drainage class: Moderately well drained
Ecological site: Clay Upland (pe35-42)

1366—Clareson-Rock outcrop complex, 2 to 15 percent slopes

Map Unit Composition

Clareson: 60 percent
Rock outcrop: 20 percent
Minor components: 20 percent

Component Descriptions

Clareson
MLRA: -
Landform: Hillslope on upland
Hillslope position: Shoulder, backslope
Parent material: Clayey residuum weathered from limestone
Slope: 2 to 15 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (lithic)
Drainage class: Well drained
Slowest permeability: Impermeable (About 0.00 in/hr)
Available water capacity: Low (About 3.9 inches)
Shrink-swell potential: Moderate (About 4.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: More than 6 feet
Runoff class: Very high
Ecological site: Shallow Flats (pe35-42)
Land capability (nonirrigated): 6e

Typical Profile:
A—0 to 11 inches; silty clay loam
BA—11 to 16 inches; flaggy silty clay loam
Bt—16 to 28 inches; flaggy silty clay
BC—28 to 33 inches; flaggy silty clay
R—33 to 37 inches; unweathered bedrock

Rock outcrop
MLRA: -
Landform: Hillslope on upland
Hillslope position: Backslope, shoulder
Parent material: Residuum weathered from limestone
Slope: 2 to 15 percent
Depth to restrictive feature: 0 inches to bedrock (lithic)
Available water capacity: Very low (About 0.0 inches)
Flooding hazard: None
Depth to seasonal water saturation: More than 6 feet
Runoff class: High
Land capability (nonirrigated): 8s

Minor Components

Lebo

Composition: About 5 percent
Geomorphic Position: hillslope on upland
Slope: 2 to 15 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained
Ecological site: Loamy Upland (pe35-42)

Summit

Composition: About 5 percent
Geomorphic Position: hillslope on upland
Slope: 2 to 15 percent
Drainage class: Moderately well drained
Ecological site: Clay Upland (pe35-42)

Wagstaff

Composition: About 5 percent
Geomorphic Position: hillslope on upland
Slope: 2 to 15 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (lithic)
Drainage class: Moderately well drained
Ecological site: Loamy Upland (pe35-42)

Eram

Composition: About 5 percent
Geomorphic Position: hillslope on upland
Slope: 2 to 15 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Moderately well drained
Ecological site: Clay Upland (pe35-42)

General Considerations: Most areas of this map unit are rangeland. They are suited to rangeland. The major concerns of management are erosion and low available water holding capacity. The depth to bedrock and large stones limits the suitability of this map unit for many engineering uses. The land capability classification is VIe.

2326—Kenoma silt loam, 1 to 4 percent slopes

Map Unit Composition

Kenoma: 90 percent
Minor components: 10 percent

Component Descriptions

Kenoma

MLRA: -
Landform: Hillslope on upland
Hillslope position: Backslope
Parent material: Silty and clayey sediments
Slope: 1 to 4 percent
Drainage class: Moderately well drained
Slowest permeability: Very slow (About 0.00 in/hr)
Available water capacity: Moderate (About 8.7 inches)
Shrink-swell potential: High (About 7.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: About 9 to 14 inches
Runoff class: Very high
Ecological site: Clay Upland (pe35-42)
Land capability (nonirrigated): 3e

Typical Profile:

Ap—0 to 4 inches; silt loam
A—4 to 10 inches; silt loam
Bt1—10 to 18 inches; silty clay
Bt2—18 to 27 inches; silty clay
Bt3—27 to 41 inches; silty clay
Bt4—41 to 59 inches; silty clay
Bt5—59 to 73 inches; silty clay loam

Minor Components

Woodson

Composition: About 5 percent
Geomorphic Position: hillslope on upland
Slope: 1 to 4 percent
Drainage class: Somewhat poorly drained
Ecological site: Clay Upland (pe35-42)

Eram

Composition: About 5 percent
Geomorphic Position: hillslope on upland
Slope: 1 to 4 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Moderately well drained
Ecological site: Clay Upland (pe35-42)

General Considerations: Most areas of this soil is used for cultivated crops and pasture. It is suited to most crops grown in the watershed. Erosion is a serious hazard that can be controlled by contour farming, terraces, or conservation tillage. This soil is well suited to tame grass pasture. The wetness limits the suitability of this soil for engineering uses. The land capability classification is IIIe.

2540—Leanna silt loam, 0 to 2 percent slopes, occasionally flooded

Map Unit Composition

Leanna: 85 percent

Minor components: 15 percent

Component Descriptions

Leanna
MLRA: -
Landform: Flood plain on valley
Hillslope position: Toeslope
Parent material: Silty and clayey alluvium
Slope: 0 to 2 percent
Drainage class: Somewhat poorly drained
Slowest permeability: Very slow (About 0.00 in/hr)
Available water capacity: High (About 10.6 inches)
Shrink-swell potential: High (About 7.5 LEP)
Flooding hazard: Occasional
Depth to seasonal water saturation: About 4 to 9 inches
Runoff class: Low
Ecological site: Clay Lowland (pe35-42)
Land capability (nonirrigated): 2w

Typical Profile:
Ap—0 to 10 inches; silt loam
E—10 to 22 inches; silt loam
Bt—22 to 40 inches; silty clay
BC—40 to 55 inches; silty clay
C—55 to 78 inches; silty clay

Minor Components
Mason
Composition: About 5 percent
Slope: 0 to 2 percent
Drainage class: Well drained
Ecological site: Loamy Lowland (pe35-42)

Verdigris
Composition: About 5 percent
Slope: 0 to 2 percent
Drainage class: Moderately well drained
Ecological site: Loamy Lowland (pe35-42)

Osage
Composition: About 5 percent
Slope: 0 to 2 percent
Drainage class: Somewhat poorly drained
Ecological site: Clay Lowland (pe35-42)

General Considerations: Most areas of this soil are cultivated. Some areas are pasture or trees. It is suited to all crops grown in the watershed. Erosion is a serious hazard that can be controlled by conservation tillage or no-till. This soil is well suited for hay land and pasture. Flooding and wetness limits the suitability of this soil for many engineering uses. The land capability classification is IIIw.

3494—Summit silty clay loam, 1 to 4 percent slopes

Map Unit Composition

Summit: 85 percent
Minor components: 15 percent

Component Descriptions

Summit
MLRA: -
Landform: Hillslope on upland
Hillslope position: Backslope, footslope
Parent material: Silty and clayey residuum weathered from acid shale
Slope: 1 to 4 percent
Drainage class: Moderately well drained
Slowest permeability: Slow (About 0.06 in/hr)
Available water capacity: High (About 9.6 inches)
Shrink-swell potential: High (About 7.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: About 24 to 36 inches
Runoff class: High
Ecological site: Clay Upland (pe35-42)
Land capability (nonirrigated): 2e

Typical Profile:
A—0 to 9 inches; silty clay loam
Bt1—9 to 17 inches; silty clay
Bt2—17 to 24 inches; silty clay
Bt3—24 to 41 inches; silty clay
Bt4—41 to 61 inches; silty clay
Bt5—61 to 73 inches; silty clay

Minor Components
Kenoma
Composition: About 10 percent
Slope: 1 to 4 percent
Drainage class: Moderately well drained
Ecological site: Clay Upland (pe35-42)

Wagstaff
Composition: About 5 percent
Geomorphic Position: hillslope on upland
Slope: 1 to 3 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (lithic)
Drainage class: Moderately well drained
Ecological site: Loamy Upland (pe35-42)

General Considerations: Most areas of this soil are cultivated. It is well suited to all crops commonly grown in the watershed. Erosion is a serious hazard that can be controlled by

terraces, contour farming, or conservation tillage. This soil has good potential for hay, tame grasses, and trees. The wetness limits the suitability of this soil for many engineering uses. The land capability classification is IIe.

3815—Verdigris silt loam, 0 to 2 percent slopes, frequently flooded

Map Unit Composition

Verdigris: 85 percent
Minor components: 15 percent

Component Descriptions

Verdigris
MLRA: -
Landform: Flood plain on valley
Parent material: Fine-silty alluvium
Slope: 0 to 2 percent
Drainage class: Moderately well drained
Slowest permeability: Moderate (About 0.60 in/hr)
Available water capacity: High (About 12.0 inches)
Shrink-swell potential: Moderate (About 4.5 LEP)
Flooding hazard: Frequent
Depth to seasonal water saturation: More than 6 feet
Runoff class: Low
Ecological site: Loamy Lowland (pe35-42)
Land capability (nonirrigated): 5w

Typical Profile:
Ap—0 to 9 inches; silt loam
A1—9 to 27 inches; silt loam
A2—27 to 32 inches; silt loam
AC—32 to 52 inches; silt loam
C—52 to 60 inches; silt loam

Minor Components
Summit
Composition: About 10 percent
Geomorphic Position: hillslope on upland
Slope: 2 to 8 percent
Drainage class: Moderately well drained
Ecological site: Clay Upland (pe35-42)

Osage
Composition: About 5 percent
Geomorphic Position: flood plain on valley
Slope: 0 to 2 percent
Drainage class: Somewhat poorly drained
Ecological site: Clay Lowland (pe35-42)

General Considerations: Most areas of this soil are pasture and trees. This soil is suited for pasture or trees. This soil is suited to tall fescue and reed canarygrass. Flooding limits the suitability of this soil for many engineering uses. The land capability classification is Vw.

3816—Verdigris silt loam, 0 to 2 percent slopes, occasionally flooded

Map Unit Composition

Verdigris: 90 percent
Minor components: 10 percent

Component Descriptions

Verdigris
MLRA: -
Landform: Flood plain on valley
Parent material: Fine-silty alluvium
Slope: 0 to 2 percent
Drainage class: Moderately well drained
Slowest permeability: Moderate (About 0.60 in/hr)
Available water capacity: High (About 12.0 inches)
Shrink-swell potential: Moderate (About 4.5 LEP)
Flooding hazard: Occasional
Depth to seasonal water saturation: More than 6 feet
Runoff class: Low
Ecological site: Loamy Lowland (pe35-42)
Land capability (nonirrigated): 2w

Typical Profile:
Ap—0 to 9 inches; silt loam
A1—9 to 27 inches; silt loam
A2—27 to 32 inches; silt loam
AC—32 to 52 inches; silt loam
C—52 to 60 inches; silt loam

Minor Components
Osage
Composition: About 10 percent
Geomorphic Position: flood plain on valley
Slope: 0 to 2 percent
Drainage class: Somewhat poorly drained
Ecological site: Clay Lowland (pe35-42)

General Considerations: Most areas of this soil are cultivated. Some areas are pasture or

trees. It is well suited to all crops grown in the watershed. Erosion is a serious hazard that can be controlled by conservation tillage or no-till. This soil is well suited for hay land and pasture. Flooding and wetness limits the suitability of this soil for many engineering uses. The land capability classification is IIw.

3951—Woodson silt loam, 1 to 3 percent slopes

Map Unit Composition

Woodson: 85 percent
Minor components: 15 percent

Component Descriptions

Woodson
MLRA: -
Landform: Paleoterrace on upland
Hillslope position: Summit
Parent material: Silty and clayey sediments
Slope: 1 to 3 percent
Drainage class: Somewhat poorly drained
Slowest permeability: Very slow (About 0.00 in/hr)
Available water capacity: Moderate (About 8.7 inches)
Shrink-swell potential: High (About 7.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: About 4 to 9 inches
Runoff class: Medium
Ecological site: Clay Upland (pe35-42)
Land capability (nonirrigated): 3e

Typical Profile:
A—0 to 10 inches; silt loam
Bt1—10 to 21 inches; silty clay
Bt2—21 to 30 inches; silty clay
BC—30 to 48 inches; silty clay
C—48 to 60 inches; silty clay

Minor Components
Kenoma
Composition: About 10 percent
Slope: 1 to 4 percent
Drainage class: Moderately well drained
Ecological site: Clay Upland (pe35-42)

Summit
Composition: About 5 percent
Geomorphic Position: hillslope on upland
Slope: 1 to 3 percent
Drainage class: Moderately well drained
Ecological site: Clay Upland (pe35-42)

General Considerations: Most areas of this soil are cultivated. This soil is suited to most crops grown in the watershed. Wetness and seasonal droughtiness can limit crops in some years. Erosion is a slight hazard that can be controlled by conservation tillage or no-tills. This soil is well suited to tame grasses. The wetness limits the suitability of this soil for engineering uses. The land capability classification is IIs.

AED—Arents, Earthen Dam

Bc—Bates loam, 1 to 4 percent slopes

Map Unit Composition

Bates: 90 percent
Minor components: 10 percent

Component Descriptions

Bates
MLRA: 112 - Cherokee Prairies
Landform: Hillslope on upland
Parent material: Sandy and silty residuum weathered from sandstone, unspecified over sandy and
silty residuum weathered from sandstone-shale
Slope: 1 to 4 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: Moderate (About 0.60 in/hr)
Available water capacity: Moderate (About 6.1 inches)
Shrink-swell potential: Low (About 1.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: More than 6 feet
Runoff class: Low
Ecological site: Loamy Upland (pe35-42)
Land capability (nonirrigated): 2e

Typical Profile:
H1—0 to 19 inches; loam
H2—19 to 34 inches;
H3—34 to 38 inches;
H4—38 to 42 inches;

Minor Components

Dennis
Composition: About 5 percent
Geomorphic Position: hillslope on upland
Slope: 2 to 6 percent
Drainage class: Moderately well drained
Ecological site: Loamy Upland (pe35-42)

Kenoma
Composition: About 5 percent
Geomorphic Position: hillslope on upland
Slope: 1 to 4 percent
Drainage class: Moderately well drained
Ecological site: Clay Upland (pe35-42)

Bd—Bates-Collinsville loams, 3 to 7 percent slopes

Map Unit Composition

Bates: 50 percent
Collinsville: 35 percent
Minor components: 15 percent

Component Descriptions

Bates
MLRA: 112 - Cherokee Prairies
Landform: Hillslope on upland
Parent material: Sandy and silty residuum weathered from sandstone, unspecified over sandy and
silty residuum weathered from sandstone-shale
Slope: 3 to 7 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: Moderate (About 0.60 in/hr)
Available water capacity: Low (About 5.4 inches)
Shrink-swell potential: Low (About 1.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: More than 6 feet
Runoff class: Medium
Ecological site: Loamy Upland (pe35-42)
Land capability (nonirrigated): 4e

Typical Profile:
H1—0 to 15 inches; loam
H2—15 to 23 inches; clay loam
H3—23 to 28 inches; gravelly clay loam
Cr—28 to 32 inches; unweathered bedrock

Collinsville
MLRA: 112 - Cherokee Prairies
Landform: Hillslope on upland
Hillslope position: Backslope
Parent material: Sandstone residuum
Slope: 3 to 7 percent
Depth to restrictive feature: 4 to 20 inches to bedrock (lithic)
Drainage class: Well drained
Slowest permeability: Moderately rapid (About 2.00 in/hr)
Available water capacity: Very low (About 2.2 inches)
Shrink-swell potential: Low (About 1.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: More than 6 feet
Runoff class: Medium
Ecological site: Shallow Sandstone (pe35-42)
Land capability (nonirrigated): 6s

Typical Profile:
H1—0 to 6 inches; loam
H2—6 to 14 inches; fine sandy loam
R—14 to 18 inches; unweathered bedrock

Minor Components
Dennis
Composition: About 8 percent
Slope: 4 to 7 percent
Drainage class: Moderately well drained
Ecological site: Loamy Upland (pe35-42)

Eram
Composition: About 7 percent
Geomorphic Position: hillslope on upland
Slope: 3 to 7 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Moderately well drained
Ecological site: Clay Upland (pe35-42)

Bh—Bates-Collinsville loams, 7 to 12 percent slopes

Map Unit Composition

Bates: 50 percent
Collinsville: 35 percent
Minor components: 15 percent

Component Descriptions

Bates
MLRA: 112 - Cherokee Prairies
Landform: Hillslope on upland
Hillslope position: Backslope

Parent material: Sandy and silty residuum weathered from sandstone over sandy and silty residuum
weathered from sandstone and shale
Slope: 7 to 8 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: Moderate (About 0.60 in/hr)
Available water capacity: Moderate (About 6.5 inches)
Shrink-swell potential: Low (About 1.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: More than 6 feet
Runoff class: Medium
Ecological site: Loamy Upland (pe35-42)
Land capability (nonirrigated): 6s

Typical Profile:
H1—0 to 19 inches; loam
H2—19 to 26 inches; loam
H3—26 to 34 inches; gravelly loam
Cr—34 to 38 inches; unweathered bedrock

Collinsville
MLRA: 112 - Cherokee Prairies
Landform: Hillslope on upland
Hillslope position: Backslope
Parent material: Loamy residuum weathered from sandstone
Slope: 7 to 12 percent
Depth to restrictive feature: 4 to 20 inches to bedrock (lithic)
Drainage class: Well drained
Slowest permeability: Moderately rapid (About 2.00 in/hr)
Available water capacity: Very low (About 2.7 inches)
Shrink-swell potential: Low (About 1.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: More than 6 feet
Runoff class: Low
Ecological site: Shallow Sandstone (pe35-42)
Land capability (nonirrigated): 7s

Typical Profile:
H1—0 to 11 inches; loam
H2—11 to 17 inches; channery loam
R—17 to 21 inches; unweathered bedrock

Minor Components
Dennis
Composition: About 5 percent
Geomorphic Position: hillslope on upland
Slope: 2 to 6 percent
Drainage class: Moderately well drained
Ecological site: Loamy Upland (pe35-42)

Eram
Composition: About 5 percent
Geomorphic Position: hillslope on upland
Slope: 7 to 12 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Moderately well drained
Ecological site: Clay Upland (pe35-42)

Olpe
Composition: About 5 percent
Geomorphic Position: paleoterrace on upland
Slope: 1 to 5 percent
Drainage class: Well drained
Ecological site: Loamy Upland (pe35-42)

Bo—Bolivar-Hector loams, 2 to 6 percent slopes

Map Unit Composition

Bolivar: 65 percent
Hector: 25 percent
Minor components: 10 percent

Component Descriptions

Bolivar
MLRA: 112 - Cherokee Prairies
Landform: Hillslope on upland
Hillslope position: Summit, backslope
Parent material: Loamy residuum weathered from sandstone
Slope: 2 to 6 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: Moderate (About 0.60 in/hr)
Available water capacity: Low (About 5.3 inches)
Shrink-swell potential: Moderate (About 4.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: More than 6 feet
Runoff class: Low
Ecological site: Savannah (pe35-42)
Land capability (nonirrigated): 4e

Typical Profile:
H1—0 to 13 inches; loam
H2—13 to 28 inches; sandy clay loam

H3—28 to 34 inches; channery sandy clay loam
Cr—34 to 38 inches; unweathered bedrock

Hector
MLRA: 112 - Cherokee Prairies
Landform: Hillslope on upland
Hillslope position: Backslope
Parent material: Loamy residuum weathered from sandstone
Slope: 2 to 6 percent
Depth to restrictive feature: 10 to 20 inches to bedrock (lithic)
Drainage class: Well drained
Slowest permeability: Moderately rapid (About 2.00 in/hr)
Available water capacity: Very low (About 2.2 inches)
Shrink-swell potential: Low (About 1.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: More than 6 feet
Runoff class: Very low
Ecological site: Shallow Savannah (pe35-42)

Typical Profile:
H1—0 to 9 inches; loam
H2—9 to 18 inches; fine sandy loam
R—18 to 22 inches; unweathered bedrock

Minor Components
Welda
Composition: About 10 percent
Geomorphic Position: hillslope on upland
Slope: 2 to 5 percent
Drainage class: Well drained
Ecological site: Savannah (pe35-42)

Bs—Bolivar-Hector loams, 6 to 12 percent slopes

Map Unit Composition

Bolivar: 50 percent
Hector: 40 percent
Minor components: 10 percent

Component Descriptions

Bolivar
MLRA: 112 - Cherokee Prairies
Landform: Hillslope on upland
Hillslope position: Backslope
Parent material: Loamy residuum weathered from sandstone
Slope: 6 to 12 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: Moderate (About 0.60 in/hr)
Available water capacity: Low (About 5.3 inches)
Shrink-swell potential: Moderate (About 4.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: More than 6 feet
Runoff class: Medium
Ecological site: Savannah (pe35-42)
Land capability (nonirrigated): 6e

Typical Profile:
H1—0 to 13 inches; loam
H2—13 to 28 inches; sandy clay loam
H3—28 to 34 inches; channery sandy clay loam
Cr—34 to 38 inches; unweathered bedrock

Hector
MLRA: 112 - Cherokee Prairies
Landform: Hillslope on upland
Hillslope position: Backslope
Parent material: Loamy residuum weathered from sandstone
Slope: 6 to 12 percent
Depth to restrictive feature: 10 to 20 inches to bedrock (lithic)
Drainage class: Well drained
Slowest permeability: Moderately rapid (About 2.00 in/hr)
Available water capacity: Very low (About 2.2 inches)
Shrink-swell potential: Low (About 1.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: More than 6 feet
Runoff class: Low
Ecological site: Shallow Savannah (pe35-42)
Land capability (nonirrigated): 7e

Typical Profile:
H1—0 to 9 inches; loam
H2—9 to 18 inches; loam
R—18 to 22 inches; unweathered bedrock

Minor Components
Welda
Composition: About 10 percent
Geomorphic Position: hillslope on upland
Slope: 2 to 5 percent
Drainage class: Well drained
Ecological site: Savannah (pe35-42)

Cm—Clareson-Eram silty clay loams, 3 to 15 percent slopes

Map Unit Composition

Clareson: 55 percent
Eram: 30 percent
Minor components: 15 percent

Component Descriptions

Clareson
MLRA: 112 - Cherokee Prairies
Landform: Hillslope on upland
Hillslope position: Backslope
Parent material: Silty and clayey residuum weathered from limestone
Slope: 3 to 15 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (lithic)
Drainage class: Well drained
Slowest permeability: Slow (About 0.06 in/hr)
Available water capacity: Low (About 3.2 inches)
Shrink-swell potential: High (About 7.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: More than 6 feet
Runoff class: Very high
Ecological site: Shallow Flats (pe35-42)
Land capability (nonirrigated): 6e

Typical Profile:
A—0 to 7 inches; silty clay loam
BA—7 to 15 inches; silty clay loam
Bt—15 to 26 inches; flaggy silty clay loam
R—26 to 30 inches; unweathered bedrock

Eram
MLRA: 112 - Cherokee Prairies
Landform: Hillslope on upland
Hillslope position: Backslope
Parent material: Silty and clayey residuum weathered from shale
Slope: 3 to 12 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Moderately well drained
Slowest permeability: Slow (About 0.06 in/hr)
Available water capacity: Low (About 5.6 inches)
Shrink-swell potential: High (About 7.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: About 9 to 14 inches
Runoff class: Very high
Ecological site: Clay Upland (pe35-42)
Land capability (nonirrigated): 6e

Typical Profile:
H1—0 to 7 inches; silty clay loam
H2—7 to 38 inches; silty clay
Cr—38 to 42 inches; weathered bedrock

Minor Components
Bates
Composition: About 10 percent
Geomorphic Position: hillslope on upland
Slope: 3 to 7 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained
Ecological site: Loamy Upland (pe35-42)

Rock outcrop
Composition: About 5 percent
Geomorphic Position: hillslope on upland

Dc—Dennis silt loam, 2 to 5 percent slopes

Map Unit Composition

Dennis: 90 percent
Minor components: 10 percent

Component Descriptions

Dennis
MLRA: 112 - Cherokee Prairies
Landform: Hillslope on upland
Hillslope position: Summit, backslope
Parent material: Silty and clayey residuum weathered from shale, unspecified
Slope: 2 to 5 percent
Drainage class: Moderately well drained
Slowest permeability: Slow (About 0.06 in/hr)
Available water capacity: High (About 9.3 inches)
Shrink-swell potential: High (About 7.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: About 9 to 14 inches
Runoff class: High
Ecological site: Loamy Upland (pe35-42)
Land capability (nonirrigated): 3e

Typical Profile:
H1—0 to 10 inches; silt loam
H2—10 to 15 inches; silty clay loam
H3—15 to 60 inches; silty clay

Minor Components
Bates

Composition: About 5 percent
Geomorphic Position: hillslope on upland
Slope: 3 to 7 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained
Ecological site: Loamy Upland (pe35-42)

Woodson
Composition: About 5 percent
Slope: 0 to 1 percent
Drainage class: Somewhat poorly drained
Ecological site: Clay Upland (pe35-42)

Dn—Dennis-Bates complex, 2 to 6 percent slopes

Map Unit Composition

Dennis: 60 percent
Bates: 30 percent
Minor components: 10 percent

Component Descriptions

Dennis
MLRA: 112 - Cherokee Prairies
Landform: Hillslope on upland
Hillslope position: Backslope
Parent material: Silty and clayey residuum weathered from shale
Slope: 2 to 6 percent
Drainage class: Moderately well drained
Slowest permeability: Slow (About 0.06 in/hr)
Available water capacity: High (About 10.6 inches)
Shrink-swell potential: High (About 7.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: About 12 to 18 inches
Runoff class: High
Ecological site: Loamy Upland (pe35-42)
Land capability (nonirrigated): 3e

Typical Profile:
H1—0 to 10 inches; silt loam
H2—10 to 15 inches; silty clay loam
H3—15 to 60 inches; silty clay

Bates
MLRA: 112 - Cherokee Prairies
Landform: Hillslope on upland
Hillslope position: Backslope
Parent material: Sandy and silty residuum weathered from sandstone over sandy and silty residuum weathered from sandstone and shale
Slope: 2 to 6 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: Moderate (About 0.60 in/hr)
Available water capacity: Moderate (About 6.5 inches)
Shrink-swell potential: Low (About 1.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: More than 6 feet
Runoff class: Low
Ecological site: Loamy Upland (pe35-42)
Land capability (nonirrigated): 3e

Typical Profile:
H1—0 to 19 inches; loam
H2—19 to 26 inches; loam
H3—26 to 34 inches; gravelly loam
Cr—34 to 38 inches; unweathered bedrock

Minor Components
Eram
Composition: About 5 percent
Geomorphic Position: hillslope on upland
Slope: 7 to 12 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Moderately well drained
Ecological site: Clay Upland (pe35-42)

Osage
Composition: About 5 percent
Slope: 0 to 1 percent
Drainage class: Poorly drained
Ecological site: Clay Lowland (pe35-42)

Do—Dennis-Bates complex, 3 to 6 percent slopes, eroded

Map Unit Composition

Dennis: 60 percent
Bates: 30 percent
Minor components: 10 percent

Component Descriptions

Dennis
MLRA: 112 - Cherokee Prairies
Landform: Hillslope on upland
Hillslope position: Backslope
Parent material: Silty and clayey residuum weathered from shale, unspecified

Slope: 3 to 6 percent
Drainage class: Moderately well drained
Slowest permeability: Slow (About 0.06 in/hr)
Available water capacity: High (About 10.6 inches)
Shrink-swell potential: High (About 7.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: About 12 to 18 inches
Runoff class: High
Ecological site: Loamy Upland (pe35-42)
Land capability (nonirrigated): 4e

Typical Profile:
H1—0 to 6 inches; silt loam
H2—6 to 15 inches; silty clay loam
H3—15 to 60 inches; silty clay

Bates
MLRA: 112 - Cherokee Prairies
Landform: Hillslope on upland
Hillslope position: Backslope
Parent material: Sandy and silty residuum weathered from sandstone, unspecified over sandy and
silty residuum weathered from sandstone-shale
Slope: 3 to 6 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: Moderate (About 0.60 in/hr)
Available water capacity: Low (About 5.1 inches)
Shrink-swell potential: Moderate (About 4.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: More than 6 feet
Runoff class: Medium
Ecological site: Loamy Upland (pe35-42)
Land capability (nonirrigated): 4e

Typical Profile:
H1—0 to 6 inches; clay loam
H2—6 to 26 inches; clay loam
H3—26 to 30 inches; clay loam
Cr—30 to 34 inches; unweathered bedrock

Minor Components
Eram
Composition: About 10 percent
Geomorphic Position: hillslope on upland
Slope: 7 to 12 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Moderately well drained
Ecological site: Clay Upland (pe35-42)

Ea—Eram-Lebo silty clay loams, 7 to 12 percent slopes

Map Unit Composition

Eram: 55 percent
Lebo: 35 percent
Minor components: 10 percent

Component Descriptions

Eram
MLRA: 112 - Cherokee Prairies
Landform: Hillslope on upland
Hillslope position: Backslope
Parent material: Silty and clayey residuum weathered from shale
Slope: 7 to 12 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Moderately well drained
Slowest permeability: Slow (About 0.06 in/hr)
Available water capacity: Low (About 5.6 inches)
Shrink-swell potential: High (About 7.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: About 9 to 14 inches
Runoff class: Very high
Ecological site: Clay Upland (pe35-42)
Land capability (nonirrigated): 6e

Typical Profile:
H1—0 to 7 inches; silty clay loam
H2—7 to 38 inches; silty clay
Cr—38 to 42 inches; weathered bedrock

Lebo
MLRA: 112 - Cherokee Prairies
Landform: Hillslope on upland
Hillslope position: Backslope
Parent material: Loamy residuum weathered from sandstone and shale
Slope: 8 to 12 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: Moderate (About 0.60 in/hr)
Available water capacity: Low (About 5.5 inches)
Shrink-swell potential: Moderate (About 4.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: More than 6 feet
Runoff class: Medium

Ecological site: Loamy Upland (pe35-42)
Land capability (nonirrigated): 6e

Typical Profile:
H1—0 to 14 inches; silty clay loam
H2—14 to 28 inches; very channery silty clay loam
Cr—28 to 36 inches; weathered bedrock

Minor Components
Clareson
Composition: About 5 percent
Geomorphic Position: hillslope on upland
Slope: 3 to 15 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (lithic)
Drainage class: Well drained
Ecological site: Shallow Flats (pe35-42)

Dennis
Composition: About 5 percent
Geomorphic Position: hillslope on upland
Slope: 2 to 6 percent
Drainage class: Moderately well drained
Ecological site: Loamy Upland (pe35-42)

Ec—Eram-Lula complex, 3 to 7 percent slopes

Map Unit Composition

Eram: 60 percent
Lula: 25 percent
Minor components: 15 percent

Component Descriptions

Eram
MLRA: 112 - Cherokee Prairies
Landform: Hillslope on upland
Hillslope position: Backslope
Parent material: Silty and clayey residuum weathered from shale
Slope: 3 to 7 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Moderately well drained
Slowest permeability: Slow (About 0.06 in/hr)
Available water capacity: Low (About 5.6 inches)
Shrink-swell potential: High (About 7.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: About 9 to 14 inches
Runoff class: High
Ecological site: Clay Upland (pe35-42)
Land capability (nonirrigated): 4e

Typical Profile:
H1—0 to 7 inches; silty clay loam
H2—7 to 38 inches; silty clay
Cr—38 to 42 inches; weathered bedrock

Lula
MLRA: 112 - Cherokee Prairies
Landform: Hillslope on upland
Hillslope position: Summit, backslope
Parent material: Fine-silty residuum weathered from limestone
Slope: 3 to 5 percent
Depth to restrictive feature: 40 to 60 inches to bedrock (lithic)
Drainage class: Well drained
Slowest permeability: Moderate (About 0.60 in/hr)
Available water capacity: Moderate (About 7.9 inches)
Shrink-swell potential: High (About 7.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: More than 6 feet
Runoff class: High
Ecological site: Loamy Upland (pe35-42)
Land capability (nonirrigated): 3e

Typical Profile:
H1—0 to 7 inches; silt loam
H2—7 to 12 inches; silty clay loam
H3—12 to 44 inches; silty clay loam
R—44 to 52 inches; unweathered bedrock

Minor Components
Bates
Composition: About 5 percent
Geomorphic Position: hillslope on upland
Slope: 3 to 7 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained
Ecological site: Loamy Upland (pe35-42)

Kenoma
Composition: About 5 percent
Geomorphic Position: hillslope on upland
Slope: 1 to 4 percent
Drainage class: Moderately well drained
Ecological site: Clay Upland (pe35-42)

Olpe
Composition: About 5 percent
Geomorphic Position: paleoterrace on upland
Slope: 1 to 5 percent
Drainage class: Well drained
Ecological site: Loamy Upland (pe35-42)

INT—Aquolls

Map Unit Composition

Aquolls: 100 percent

Component Descriptions

Aquolls
MLRA: 112 - Cherokee Prairies
Landform: Depression on terrace on river valley
Parent material: Alluvium
Slope: 0 to 1 percent
Drainage class: Very poorly drained
Flooding hazard: None
Ponding hazard: Occasional
Depth to seasonal water saturation: About 0 to 0 inches
Runoff class: Negligible
Land capability (nonirrigated): 5w

Typical Profile:
H1—0 to 72 inches; variable

General Considerations: This map unit was formerly labeled as an Intermittent Water spot symbol. These depressional areas contain soils that are occasionally ponded for long duration.

Ke—Kenoma silt loam, 1 to 4 percent slopes

Map Unit Composition

Kenoma: 90 percent
Minor components: 10 percent

Component Descriptions

Kenoma
MLRA: 112 - Cherokee Prairies
Landform: Hillslope on upland
Parent material: Silty and clayey residuum weathered from limestone-shale
Slope: 1 to 4 percent
Drainage class: Moderately well drained
Slowest permeability: Very slow (About 0.00 in/hr)
Available water capacity: High (About 10.3 inches)
Shrink-swell potential: High (About 7.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: More than 6 feet
Runoff class: Very high
Ecological site: Clay Upland (pe35-42)
Land capability (nonirrigated): 3e

Typical Profile:
H1—0 to 11 inches; silt loam
H2—11 to 34 inches; silty clay
H3—34 to 60 inches; silty clay

Minor Components
Olpe
Composition: About 5 percent
Geomorphic Position: paleoterrace on upland
Slope: 1 to 5 percent
Drainage class: Well drained
Ecological site: Loamy Upland (pe35-42)

Lula
Composition: About 5 percent
Geomorphic Position: hillslope on upland
Slope: 1 to 3 percent
Depth to restrictive feature: 40 to 60 inches to bedrock (lithic)
Drainage class: Well drained
Ecological site: Loamy Upland (pe35-42)

Le—Leanna silt loam, occasionally flooded

Map Unit Composition

Leanna: 90 percent
Minor components: 10 percent

Component Descriptions

Leanna
MLRA: 112 - Cherokee Prairies
Landform: Flood plain on river valley
Parent material: Silty and clayey alluvium
Slope: 0 to 1 percent
Drainage class: Somewhat poorly drained
Slowest permeability: Very slow (About 0.00 in/hr)
Available water capacity: High (About 10.2 inches)
Shrink-swell potential: High (About 7.5 LEP)
Flooding hazard: Occasional
Depth to seasonal water saturation: About 6 to 24 inches
Runoff class: High
Ecological site: Clay Lowland (pe35-42)

Land capability (nonirrigated): 2w

Typical Profile:
H1—0 to 16 inches; silt loam
H2—16 to 52 inches; silty clay
H3—52 to 60 inches; silty clay loam

Minor Components
Osage
Composition: About 5 percent
Slope: 0 to 1 percent
Drainage class: Poorly drained
Ecological site: Clay Lowland (pe35-42)

Hepler
Composition: About 5 percent
Slope: 0 to 1 percent
Drainage class: Somewhat poorly drained
Ecological site: Loamy Lowland (pe35-42)

Ln—Lebo-Rock outcrop complex, 20 to 40 percent slopes

Map Unit Composition

Lebo: 75 percent
Rock outcrop: 15 percent
Minor components: 10 percent

Component Descriptions

Lebo
MLRA: 112 - Cherokee Prairies
Landform: Hillslope on upland
Hillslope position: Backslope
Parent material: Residuum weathered from shale-sandstone
Slope: 20 to 40 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: Moderate (About 0.60 in/hr)
Available water capacity: Low (About 3.4 inches)
Shrink-swell potential: Moderate (About 4.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: More than 6 feet
Runoff class: High
Ecological site: Loamy Upland (pe35-42)
Land capability (nonirrigated): 7e

Typical Profile:
H1—0 to 7 inches; stony silty clay loam
H2—7 to 14 inches; channery silty clay loam
H3—14 to 28 inches; very channery silty clay loam
Cr—28 to 36 inches; weathered bedrock

Rock outcrop
MLRA: 112 - Cherokee Prairies
Landform: Ridge on upland
Hillslope position: Summit
Parent material: Limestone
Drainage class: Well drained
Depth to seasonal water saturation: More than 6 feet
Runoff class: Very high
Land capability (nonirrigated): 8e

Minor Components
Clareson
Composition: About 10 percent
Geomorphic Position: hillslope on upland
Slope: 3 to 15 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (lithic)
Drainage class: Well drained
Ecological site: Shallow Flats (pe35-42)

Lo—Lula silt loam, 0 to 2 percent slopes

Map Unit Composition

Lula: 90 percent
Minor components: 10 percent

Component Descriptions

Lula
MLRA: 112 - Cherokee Prairies
Landform: Hillslope on upland
Hillslope position: Summit
Parent material: Fine-silty residuum weathered from limestone
Slope: 0 to 2 percent
Depth to restrictive feature: 40 to 60 inches to bedrock (lithic)
Drainage class: Well drained
Slowest permeability: Moderate (About 0.60 in/hr)
Available water capacity: High (About 10.3 inches)
Shrink-swell potential: Moderate (About 4.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: More than 6 feet
Runoff class: Low

Ecological site: Loamy Upland (pe35-42)
Land capability (nonirrigated): 2e

Typical Profile:
H1—0 to 9 inches; silt loam
H2—9 to 18 inches; silty clay loam
H3—18 to 57 inches; silty clay loam
R—57 to 65 inches; unweathered bedrock

Minor Components
Clareson
Composition: About 5 percent
Slope: 1 to 8 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (lithic)
Drainage class: Well drained
Ecological site: Shallow Flats (pe35-42)

Kenoma
Composition: About 5 percent
Slope: 1 to 2 percent
Drainage class: Moderately well drained
Ecological site: Clay Upland (pe35-42)

LU—Lula silt loam, 1 to 3 percent slopes

Map Unit Composition

Lula: 85 percent
Minor components: 15 percent

Component Descriptions

Lula
MLRA: 112 - Cherokee Prairies
Landform: Hillslope on upland
Hillslope position: Summit
Parent material: Residuum weathered from limestone
Slope: 1 to 3 percent
Depth to restrictive feature: 40 to 60 inches to bedrock (lithic)
Drainage class: Well drained
Slowest permeability: Moderate (About 0.60 in/hr)
Available water capacity: Moderate (About 7.9 inches)
Shrink-swell potential: Moderate (About 4.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: More than 6 feet
Runoff class: High
Ecological site: Loamy Upland (pe35-42)
Land capability (nonirrigated): 2e

Typical Profile:
A—0 to 8 inches; silt loam
AB—8 to 14 inches; silty clay loam
Bt—14 to 44 inches; silty clay loam
R—44 to 52 inches; unweathered bedrock

Minor Components
Eram
Composition: About 5 percent
Slope: 3 to 7 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Moderately well drained
Ecological site: Clay Upland (pe35-42)

Kenoma
Composition: About 5 percent
Slope: 1 to 4 percent
Depth to restrictive feature: 40 to 60 inches to bedrock (lithic)
Drainage class: Moderately well drained
Ecological site: Clay Upland (pe35-42)

Dwight
Composition: About 5 percent
Slope: 0 to 3 percent
Drainage class: Moderately well drained
Ecological site: Clay Pan (pe35-42)

M-W—Miscellaneous Water

Mb—Mason silt loam, 0 to 2 percent slopes, rarely flooded

Map Unit Composition

Mason: 90 percent
Minor components: 10 percent

Component Descriptions

Mason
MLRA: 112 - Cherokee Prairies
Landform: Stream terrace on river valley
Parent material: Fine-silty alluvium
Slope: 0 to 1 percent
Drainage class: Well drained
Slowest permeability: Moderately slow (About 0.20 in/hr)
Available water capacity: High (About 10.6 inches)
Shrink-swell potential: Moderate (About 4.5 LEP)
Flooding hazard: Rare

Depth to seasonal water saturation: More than 6 feet
Runoff class: Low
Ecological site: Loamy Lowland (pe35-42)
Land capability (nonirrigated): 1

Typical Profile:
H1—0 to 7 inches; silt loam
H2—7 to 60 inches; silty clay loam

Minor Components
Welda
Composition: About 5 percent
Geomorphic Position: hillslope on upland
Slope: 2 to 5 percent
Drainage class: Well drained
Ecological site: Savannah (pe35-42)

Osage
Composition: About 5 percent
Slope: 0 to 2 percent
Drainage class: Poorly drained
Ecological site: Loamy Lowland (pe35-42)

Oe—Olpe-Kenoma complex, 1 to 5 percent slopes

Map Unit Composition

Olpe: 55 percent
Kenoma: 30 percent
Minor components: 15 percent

Component Descriptions

Olpe
MLRA: 112 - Cherokee Prairies
Landform: Paleoterrace on upland
Parent material: Clayey alluvium
Slope: 1 to 5 percent
Drainage class: Well drained
Slowest permeability: Slow (About 0.06 in/hr)
Available water capacity: Low (About 3.2 inches)
Shrink-swell potential: Moderate (About 4.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: More than 6 feet
Runoff class: High
Ecological site: Loamy Upland (pe35-42)
Land capability (nonirrigated): 4e

Typical Profile:
A—0 to 7 inches; silty clay loam
B—7 to 50 inches; extremely gravelly silty clay loam
B—50 to 60 inches; silty clay

Kenoma
MLRA: 112 - Cherokee Prairies
Landform: Hillslope on upland
Parent material: Silty and clayey residuum weathered from limestone-shale
Slope: 1 to 4 percent
Drainage class: Moderately well drained
Slowest permeability: Very slow (About 0.00 in/hr)
Available water capacity: Moderate (About 8.7 inches)
Shrink-swell potential: High (About 7.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: About 9 to 14 inches
Runoff class: Very high
Ecological site: Clay Upland (pe35-42)
Land capability (nonirrigated): 3e

Typical Profile:
Ap—0 to 4 inches; silt loam
A—4 to 10 inches; silt loam
Bt1—10 to 18 inches; silty clay
Bt2—18 to 27 inches; silty clay
Bt3—27 to 41 inches; silty clay
Bt4—41 to 59 inches; silty clay
Bt5—59 to 73 inches; silty clay loam

Minor Components
Bates
Composition: About 7 percent
Slope: 3 to 7 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained
Ecological site: Loamy Upland (pe35-42)

Eram
Composition: About 5 percent
Geomorphic Position: hillslope on upland
Slope: 3 to 12 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Moderately well drained
Ecological site: Clay Upland (pe35-42)

Lula
Composition: About 3 percent
Slope: 1 to 3 percent
Depth to restrictive feature: 40 to 60 inches to bedrock (lithic)
Drainage class: Well drained
Ecological site: Loamy Upland (pe35-42)

Os—Osage silty clay loam, 0 to 2 percent slopes, occasionally flooded

Map Unit Composition

Osage: 85 percent
Minor components: 15 percent

Component Descriptions

Osage
MLRA: 112 - Cherokee Prairies
Landform: Flood plain on river valley
Parent material: Clayey alluvium
Slope: 0 to 2 percent
Drainage class: Poorly drained
Slowest permeability: Very slow (About 0.00 in/hr)
Available water capacity: Moderate (About 7.6 inches)
Shrink-swell potential: Very high (About 17.0 LEP)
Flooding hazard: Occasional
Depth to seasonal water saturation: About 0 to 12 inches
Runoff class: High
Ecological site: Loamy Lowland (pe35-42)
Land capability (nonirrigated): 2w

Typical Profile:
H1—0 to 14 inches; silty clay loam
H2—14 to 60 inches; silty clay

Minor Components
Mason
Composition: About 5 percent
Slope: 0 to 1 percent
Drainage class: Well drained
Ecological site: Loamy Lowland (pe35-42)

Leanna
Phase: Drained
Composition: About 5 percent
Slope: 0 to 2 percent
Drainage class: Somewhat poorly drained
Ecological site: Loamy Lowland (pe35-42)

Verdigris
Composition: About 5 percent
Slope: 0 to 2 percent
Drainage class: Well drained
Ecological site: Loamy Lowland (pe35-42)

Ov—Osage silty clay, occasionally flooded

Map Unit Composition

Osage: 90 percent
Minor components: 10 percent

Component Descriptions

Osage
MLRA: 112 - Cherokee Prairies
Landform: Flood plain on river valley
Parent material: Clayey alluvium
Slope: 0 to 1 percent
Drainage class: Poorly drained
Slowest permeability: Very slow (About 0.00 in/hr)
Available water capacity: Moderate (About 6.4 inches)
Shrink-swell potential: Very high (About 17.0 LEP)
Flooding hazard: Occasional
Ponding hazard: Occasional
Depth to seasonal water saturation: About 2 to 9 inches
Runoff class: Very high
Ecological site: Clay Lowland (pe35-42)
Land capability (nonirrigated): 3w

Typical Profile:
H1—0 to 17 inches; silty clay
H2—17 to 60 inches; silty clay

Minor Components
Verdigris
Composition: About 10 percent
Slope: 0 to 2 percent
Drainage class: Well drained
Ecological site: Loamy Lowland (pe35-42)

Pt—Pits, Quarries

General Considerations: Pits are open excavations from which soil and commonly underlying material have been removed, exposing either rock or other material. Kinds include Pits, mine; Pits, gravel; and Pits, quarry. Commonly, pits are closely associated with Dumps.

Sn—Summit silty clay loam, 1 to 3 percent slopes

Map Unit Composition

Summit: 100 percent

Component Descriptions

Summit
MLRA: 112 - Cherokee Prairies
Landform: Hillslope on upland
Hillslope position: Footslope
Parent material: Silty and clayey residuum weathered from shale, calcareous
Slope: 1 to 3 percent
Drainage class: Moderately well drained
Slowest permeability: Slow (About 0.06 in/hr)
Available water capacity: Moderate (About 8.5 inches)
Shrink-swell potential: High (About 7.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: About 24 to 36 inches
Runoff class: High
Ecological site: Loamy Upland (pe35-42)
Land capability (nonirrigated): 2e

Typical Profile:
H1—0 to 6 inches; silty clay loam
H2—6 to 14 inches; silty clay loam
H3—14 to 57 inches; silty clay
H4—57 to 60 inches; silty clay loam

So—Summit silty clay loam, 3 to 7 percent slopes

Map Unit Composition

Summit: 90 percent
Minor components: 10 percent

Component Descriptions

Summit
MLRA: 112 - Cherokee Prairies
Landform: Hillslope on upland
Hillslope position: Backslope
Parent material: Silty and clayey residuum weathered from calcareous shale
Slope: 3 to 7 percent
Drainage class: Moderately well drained
Slowest permeability: Slow (About 0.06 in/hr)
Available water capacity: Moderate (About 8.6 inches)
Shrink-swell potential: High (About 7.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: About 21 to 26 inches
Runoff class: High
Ecological site: Loamy Upland (pe35-42)
Land capability (nonirrigated): 3e

Typical Profile:
A—0 to 8 inches; silty clay loam
AB—8 to 13 inches; silty clay loam
Bt—13 to 60 inches; silty clay

Minor Components
Clareson
Composition: About 5 percent
Slope: 3 to 15 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (lithic)
Drainage class: Well drained
Ecological site: Shallow Flats (pe35-42)

Lebo
Composition: About 3 percent
Geomorphic Position: hillslope on upland
Slope: 8 to 12 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained
Ecological site: Loamy Upland (pe35-42)

Lula
Composition: About 2 percent
Slope: 3 to 5 percent
Depth to restrictive feature: 40 to 60 inches to bedrock (lithic)
Drainage class: Well drained
Ecological site: Loamy Upland (pe35-42)

Vb—Verdigris silt loam, 0 to 2 percent slopes, occasionally flooded

Map Unit Composition

Verdigris: 85 percent
Minor components: 15 percent

Component Descriptions

Verdigris
MLRA: 112 - Cherokee Prairies
Landform: Flood plain on river valley
Parent material: Fine-silty alluvium
Slope: 0 to 2 percent

Drainage class: Well drained
Slowest permeability: Moderate (About 0.60 in/hr)
Available water capacity: Very high (About 12.1 inches)
Shrink-swell potential: Moderate (About 4.5 LEP)
Flooding hazard: Occasional
Depth to seasonal water saturation: More than 6 feet
Runoff class: Low
Ecological site: Loamy Lowland (pe35-42)
Land capability (nonirrigated): 2w

Typical Profile:
H1—0 to 16 inches; silt loam
H2—16 to 60 inches;

Minor Components
Mason
Composition: About 5 percent
Slope: 0 to 1 percent
Drainage class: Well drained
Ecological site: Loamy Lowland (pe35-42)

Osage
Composition: About 5 percent
Slope: 0 to 2 percent
Drainage class: Poorly drained
Ecological site: Loamy Lowland (pe35-42)

Leanna
Phase: Drained
Composition: About 5 percent
Slope: 0 to 2 percent
Drainage class: Somewhat poorly drained
Ecological site: Loamy Lowland (pe35-42)

Vc—Verdigris silt loam, channeled

Map Unit Composition

Verdigris: 88 percent
Minor components: 12 percent

Component Descriptions

Verdigris
MLRA: 112 - Cherokee Prairies
Landform: Flood plain on valley
Parent material: Silty alluvium
Slope: 0 to 2 percent
Drainage class: Well drained
Slowest permeability: Moderate (About 0.60 in/hr)
Available water capacity: High (About 12.0 inches)
Shrink-swell potential: Moderate (About 4.5 LEP)
Flooding hazard: Frequent
Depth to seasonal water saturation: More than 6 feet
Runoff class: Low
Ecological site: Loamy Lowland (pe35-42)
Land capability (nonirrigated): 5w

Typical Profile:
A—0 to 7 inches; silt loam
Bw—7 to 60 inches; silt loam

Minor Components
Bates
Composition: About 3 percent
Slope: 3 to 7 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained
Ecological site: Loamy Upland (pe35-42)

Eram
Composition: About 3 percent
Geomorphic Position: hillside on upland
Slope: 3 to 7 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Moderately well drained
Ecological site: Clay Upland (pe35-42)

Osage
Composition: About 3 percent
Slope: 0 to 1 percent
Drainage class: Poorly drained
Ecological site: Clay Lowland (pe35-42)

Rock outcrop
Composition: About 3 percent
Slope: 20 to 40 percent
Depth to restrictive feature: 0 inches to bedrock (lithic)

W—Water

Wb—Welda silt loam, 2 to 6 percent slopes

Map Unit Composition

Welda: 90 percent
Minor components: 10 percent

Component Descriptions

Welda
MLRA: 112 - Cherokee Prairies
Landform: Hillslope on upland
Parent material: Fine-silty loess
Slope: 2 to 6 percent
Drainage class: Well drained
Slowest permeability: Moderately slow (About 0.20 in/hr)
Available water capacity: High (About 11.0 inches)
Shrink-swell potential: Moderate (About 4.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: More than 6 feet
Runoff class: Medium
Ecological site: Savannah (pe35-42)
Land capability (nonirrigated): 2e

Typical Profile:
H1—0 to 11 inches; silt loam
H2—11 to 50 inches; silty clay
H3—50 to 60 inches; silty clay loam

Minor Components
Bolivar
Composition: About 5 percent
Geomorphic Position: hillslope on upland
Slope: 2 to 6 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained
Ecological site: Savannah (pe35-42)

Mason
Composition: About 5 percent
Slope: 0 to 1 percent
Drainage class: Well drained
Ecological site: Loamy Lowland (pe35-42)

Wo—Woodson silt loam, 0 to 1 percent slopes

Map Unit Composition

Woodson: 90 percent
Minor components: 10 percent

Component Descriptions

Woodson
MLRA: 112 - Cherokee Prairies
Landform: Divide on upland
Parent material: Silty and clayey alluvium over silty and clayey residuum weathered from clayey
shale
Slope: 0 to 1 percent
Drainage class: Somewhat poorly drained
Slowest permeability: Very slow (About 0.00 in/hr)
Available water capacity: Moderate (About 8.8 inches)
Shrink-swell potential: High (About 7.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: About 6 to 24 inches
Runoff class: High
Ecological site: Clay Upland (pe35-42)
Land capability (nonirrigated): 2s

Typical Profile:
H1—0 to 8 inches; silt loam
H2—8 to 43 inches; silty clay
H3—43 to 60 inches; silty clay

Minor Components
Zaar
Composition: About 10 percent
Slope: 0 to 1 percent
Drainage class: Somewhat poorly drained
Ecological site: Clay Upland (pe35-42)

Wt—Woodson silt loam, 1 to 3 percent slopes

Map Unit Composition

Woodson: 100 percent

Component Descriptions

Woodson
MLRA: 112 - Cherokee Prairies
Landform: Divide on upland
Parent material: Silty and clayey alluvium over silty and clayey residuum weathered from shale,
clayey
Slope: 1 to 2 percent
Drainage class: Somewhat poorly drained
Slowest permeability: Very slow (About 0.00 in/hr)
Available water capacity: Moderate (About 8.7 inches)
Shrink-swell potential: High (About 7.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: About 6 to 24 inches

Runoff class: Very high
Ecological site: Clay Upland (pe35-42)
Land capability (nonirrigated): 3e

Typical Profile:
H1—0 to 7 inches; silt loam
H2—7 to 43 inches; silty clay, clay
H3—43 to 60 inches; silty clay